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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/827,088	04/19/2004	Kuang-Kai Liu	9606	1872

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EXAMINER
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BOGART, MICHAEL G

ART UNIT	PAPER NUMBER
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3761

MAIL DATE	DELIVERY MODE
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10/04/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/827,088	<b>Applicant(s)</b> LIU, KUANG-KAI	
	<b>Examiner</b> Michael G. Bogart	<b>Art Unit</b> 3761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 July 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections – 35 USC § 103*

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 8 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello (US 4,931,051) in view of Pierce *et al.* (WO 00/76438 A2; hereinafter “Pierce”).

Regarding claims 1 and 8, Castello teaches a diaper having a backsheet (190), a topsheet (170) and an absorbent core (180). Castello teaches a color wetness indicator printed onto a surface of a backsheet of the diaper (col. 2, lines 30-62). Castello further teaches a coating or varnish over the wetness indicator to prevent premature activation (col. 5, lines 14-21). Castello uses hydratable salts which must be preferably combined with binder to reduce toxicity and any contact between the salts and a wearer's skin avoided (abstract; col. 3, lines 21-30). Castello's preferred hydratable salt is copper sulfate, which is a skin irritant (col. 3, lines 61-65)(see, e.g., International Resources Inc., *Material Safety Data Sheet, Copper Sulfate*, January 2001, [www.iri-us.com/msds/copper.html](http://www.iri-us.com/msds/copper.html)).

Castello does not expressly disclose that the color wetness indicator is hydrolyzable and under goes a chemical reaction upon wetting.

Pierce teaches an absorbent article (20) having wetness indication graphics (66) made of a material that dissolves in response to urine or water as part of a chemical reaction such that the

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graphic becomes visible (page 3, line 10-page 4 line 20; page 5, line 24-page 6, line 5; page 8, lines 17-22; page 19, lines 9-22)(see fig. 1, infra). Pierce uses soluble inks, which don't have the same toxicity issues as Castello's hydratable salts.

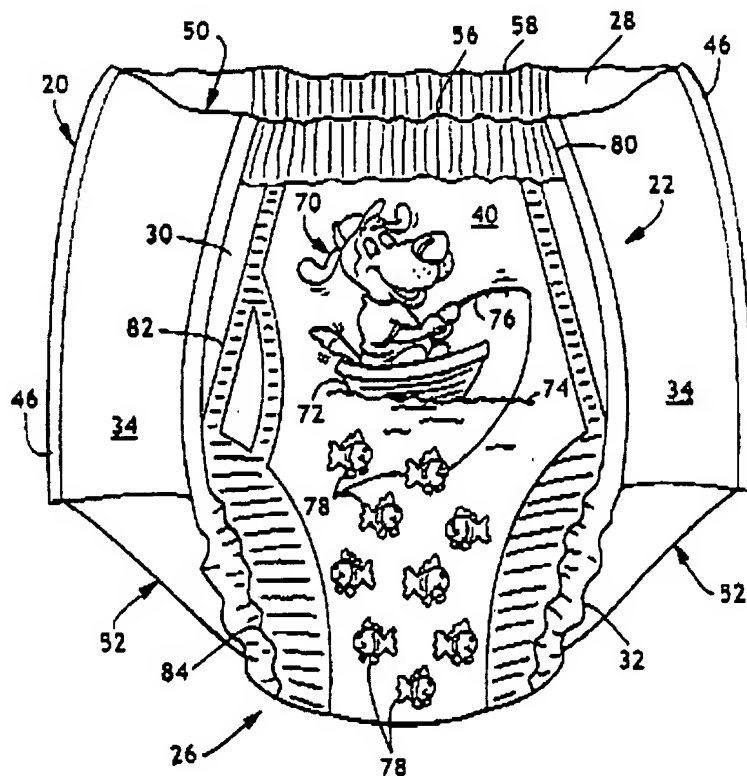


FIG. 1

At the time of the invention, it would have been obvious to one of ordinary skill in the art to substitute the graphics compositions of Pierce for use as the wetness indicator material in the absorbent articles of Castello in order to provide a material that is known to be effective for that purpose and which lacks the toxicity of some hydratable salts.

Regarding claims 2 and 3, Pierce teaches the use of alcohol as a non-aqueous solvent (page 4, lines 30-32, incorporating by reference Timmons (US 4,022,211) which teaches a

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mixture of dye and alcohol, see Timmons col. 4, lines 1-30). Pierce does not expressly disclose the specific concentration of solvent relative to dye.

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977). In the instant case, increasing the amount of dye would increase the visibility of an image formed by the dye.

Regarding claim 12, Pierce teaches a breathable backsheet (40)(page 16, line 17-page 17, line 3).

Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Pierce as applied to claims 1-3, 8 and 12 above, and further in view of Schleinz *et al.* (US 5,458,590 A; hereinafter “Schleinz”).

Castello and Pierce do not teach the claimed acetate(s).

Schleinz teaches an ink blend comprising n-propyl acetate (col. 2, lines 44-67) or isopropyl alcohol (col. 5, lines 27-45) which improves crockfastness.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the acetate of Schleinz in the wetness indicator of Castello and Pierce in order to provide improved adhesion of the ink to the substrate.

Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Pierce as applied to claims 1-3, 8 and 12 above, and further in view of Ito *et al.* (US 5,595,754 A; hereinafter "Ito").

Castello and Pierce do not teach the claimed coating materials.

Ito teaches absorbent color-changing sheets which use polyamides as resins in an impermeable layer (col. 6, lines 33 and 34).

At the time of the invention it would have been obvious to one of ordinary skill in the art to select the polyamide construction of Ito to use as an impermeable layer in the device of Castello and Pierce in order to provide a construction known in the art to be suitable for this purpose. MPEP § 2144.07.

Claims 7 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Pierce as applied to claims 1-3, 8 and 12 above, and further in view of Olson *et al.* (WO 00/76442 A1; hereinafter "Olson").

Castello and Pierce do not teach a wetness indicator printed on an inner surface.

Olson teaches an absorbent article having a changing wetness indicator printed on an inner surface of a backsheet (page 13, lines 8-12).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the graphic on the inner surface as taught by Olson with the absorbent article of Castello and Pierce in order to provide partial protection from exterior humidity.

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Claims 9 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Pierce as applied to claims 1-3, 8 and 12 above, and further in view of Polansky *et al.* (US 4,249,532; hereinafter “Polansky”).

Castello and Pierce do not teach varnish disposed beneath the color responsive composition.

Polansky teaches a seal coat underlying a graphic design.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to provide a seal coat beneath a graphic as taught by Polansky in combination with the wetness indicating article of Castello and Pierce in order to provide additional means of preventing premature activation.

Claim 13 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Pierce as applied to claims 1-3, 8 and 12 above, and further in view of Perrault *et al.* (US 4,717,378; hereinafter “Perrault”).

Castello and Pierce do not teach the specific type of dye.

Perrault teaches a method for detecting dehydration of a hydrogel which includes using D&C Red #27 (col. 2, lines 19-25). This particular dye is skin-contact grade.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the indicator dye of Perrault in the device of Castello and Pierce in order to provide a substance known to be effective for that purpose and being of skin contact grade.

Claims 14-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Castello and Pierce as applied to claims 1-3, 8 and 12 above, and further in view of Howell (US 5,389,093).

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Regarding claims 14 and 16, Castello and Pierce do not disclose directly color composition that forms a carboxylic acid upon wetting.

Howell teaches a wetness indicating diaper that uses a thermochromatic ink that changes color in response to the change in temperature triggered by the presence of urine. The thermochromatic ink comprises a fatty acid. Fatty acids are a type of carboxylic acid. (see *Hawley's Condensed Dictionary*, 14<sup>th</sup> edition, 2002). The thermochromatic ink allows the diaper to be reusable, thus avoiding waste and cost associated with disposable diapers (abstract; col. 6, lines 13-29).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the thermochromatic dye of Howell in the absorbent article of Castello and Pierce in order to allow the article to be reusable and thus more economical than a disposable article.

Regarding claim 15, Pierce teaches a breathable backsheet (40)(col. 15, lines 37-62).

### ***Response to Arguments***

Applicant's arguments filed 11 July 2007 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Castello in view of Pierce fail to teach or suggest a graphic that changes from invisible to visible as a result of hydrolysis) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Claim 1 recites a



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hydrolyzable color composition that undergoes a chemical reaction whereupon said graphic becomes visible. It does not require that the change results from it being hydrolyzable. Pierce teaches water or urine soluble graphics that include appearing graphics (col. 2, lines 50-67). Pierce incorporates by reference at page 4, line 31, Timmons *et al.* (US 4,022,211) which teaches graphics made from materials that are hydrolyzable (col. 5, lines 57-66).

Applicants assert that none of the secondary references cure the failings of Castello in view of Pierce. This argument is not persuasive because as noted supra, Castello in view of Pierce teach hydrolyzable graphics that are urine or water soluble and teach appearing and disappearing graphics.

### *Conclusion*

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bogart whose telephone number is (571) 272-4933.

In the event the examiner is not available, the Examiner's supervisor, Tatyana Zalukaeva may be reached at phone number (571) 272-1115. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for formal communications. For informal communications, the direct fax to the Examiner is (571) 273-4933.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-3700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael Bogart  
1 October 2007

**TATYANA ZALUKAEVA**  
**SUPERVISORY PRIMARY EXAMINER**  
